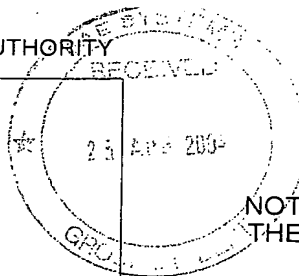


PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY



PCT

To:

BAE SYSTEMS plc
GROUP IP DEPARTMENT
Lancaster House, P.O. Box 87
Farnborough Aerospace Centre
Farnborough, Hampshire, GU14 6YU
GRANDE BRETAGNE

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
(day/month/year) 23.08.2004

Applicant's or agent's file reference
XA1671

IMPORTANT NOTIFICATION

International application No.
PCT/GB 03/04913

International filing date (day/month/year)
12.11.2003

Priority date (day/month/year)
20.11.2002

Applicant
BAE SYSTEMS PLC et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
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Authorized Officer

Püschel, S

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference XA1671	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB 03/04913	International filing date (<i>day/month/year</i>) 12.11.2003	Priority date (<i>day/month/year</i>) 20.11.2002
International Patent Classification (IPC) or both national classification and IPC G01C19/56		
Applicant BAE SYSTEMS PLC et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13.05.2004	Date of completion of this report 23.08.2004
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div> </div>	Authorized Officer Springer, O Telephone No. +49 89 2399-2619



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/04913

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-13 as originally filed

Claims, Numbers

1-15 as originally filed

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/04913

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 11, 15

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 11, 15 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1 to 10, 12 to 14
	No: Claims	
Inventive step (IS)	Yes: Claims	1 to 10, 12 to 14
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1 to 10, 12 to 14
	No: Claims	

2. Citations and explanations

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/04913

see separate sheet

Re Item III: Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

No examination of the claimed invention as to novelty, inventive step and industrial applicability is carried out for claims 11 and 15 because claims 11 and 15 rely on references to the drawings (see Rule 6.2(a) PCT and the PCT Preliminary Examination Guidelines, PCT/GL/IV, Chapter II, 4.10).

Re Item V: Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.

1. Technical Field:

Method and apparatus for measuring scalefactor variation in a vibrating structure gyroscope.

2. State of the Art:

The following documents have been considered for the purposes of this report:

D1: EP-A-0 492 739

D2: WO-A-01 53 776

D3: WO-A-01 77 620

Document D1, which is considered as being the closest prior art to the subject-matter of independent claim 1, teaches to measure the scale factor of a vibrating structure gyroscope for enabling a scale factor compensation to compensate temperature and time drift.

3. Independent Claims: Claims 1 (method) and 12 (apparatus).

4. Novelty and Inventive Step - Articles 33(2) and (3) PCT

4.1 Independent claims 1 and 12:

The subject-matter of independent claims 1 and 12 differs from document D1 in that a variation of the scale factor from a predetermined value is measured for the vibrating structure gyroscope at which the calibration scale factor is equal to the predeter-

mined scale factor divided by the Bryan factor (constant set by the vibrating structure geometry and vibration mode shape) by using quadrature and real component loop systems, automatic gain control and phase locked loop systems, a sin/cos pick off resolver, a sin/cos drive resolver and an angular displacement control.

By this scalefactor variation measurement the objective technical problem is solved to facilitate a self calibration procedure with a high degree of accuracy without the requirement for any test equipment. Such a method and such an apparatus is not known from nor rendered obvious by the cited prior art. Hence, the subject-matter of present claims 1 and 12 is considered as being novel and inventive. The requirements of Article 33(2) and (3) PCT are fulfilled.

4.2 Dependent Claims 2 to 10, 13 and 14:

The dependent claims 2 to 10, 13 and 14 relate to preferred embodiments of the system according to independent claims 1 and 12. Therefore, the requirement of Article 33(2) and (3) PCT is also fulfilled.

5. Industrial Applicability - Article 33(4) PCT

The invention as claimed in claims 1 to 10 and 12 to 14 is industrially applicable in the field of measuring scalefactor variation in a vibrating structure gyroscope.

6. Certain defects in the international application

Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in a preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in document D1 is not mentioned in the description, nor is this document identified therein.